

WHAT IS CLAIMED IS:

1. A video signal processing device, comprising:

an oblique correlation detection section for detecting correlation in an oblique direction (oblique correlation) of a composite video signal;

5 a line correlation chrominance separation section for extracting a first chrominance signal from the composite video signal based on vertical correlation of the composite video signal; and

a first chrominance signal acquisition section for acquiring a second chrominance signal based on horizontal self-correlation of the first chrominance signal,

10 wherein the first chrominance signal acquisition section detects the self-correlation within a range corresponding to the degree of the oblique correlation detected by the oblique correlation detection section.

2. The device of Claim 1, wherein the first chrominance signal acquisition section

15 comprises:

a first chrominance signal extraction section for acquiring a third chrominance signal based on self-correlation within a first horizontal range of the first chrominance signal;

20 a second chrominance signal extraction section for acquiring a fourth chrominance signal based on self-correlation within a second horizontal range of the first chrominance signal; and

a first chrominance signal selection section for selecting the third chrominance signal or the fourth chrominance signal as the second chrominance signal according to the degree of the oblique correlation detected by the oblique correlation detection section,

25 wherein the second range is wider than the first range.

3. The device of Claim 1, further comprising a subtractor section for extracting a luminance signal from the composite video signal based on the difference between the composite video signal and the second chrominance signal.

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4. The device of Claim 3, further comprising a second chrominance signal acquisition section for acquiring a third chrominance signal based on horizontal self-correlation of the first chrominance signal,

wherein the second chrominance signal acquiring section detects the self-correlation within a range according to the degree of the oblique correlation detected by the oblique detection section, the range being wider than the detection range adopted by the first chrominance signal acquisition section.

5. The device of Claim 4, wherein the first chrominance signal acquisition section comprises:

a third chrominance signal extraction section for acquiring a fourth chrominance signal based on self-correlation within a first horizontal range of the first chrominance signal;

a fourth chrominance signal extraction section for acquiring a fifth chrominance signal based on self-correlation within a second horizontal range of the first chrominance signal; and

a second chrominance signal selection section for selecting the fourth chrominance signal or the fifth chrominance signal as the second chrominance signal according to the degree of the oblique correlation detected by the oblique correlation detection section,

the second range is wider than the first range,

the second chrominance signal acquisition section comprises:

a fifth chrominance signal extraction section for acquiring a sixth chrominance signal based on self-correlation within a third horizontal range of the first chrominance signal;

5 a sixth chrominance signal extraction section for acquiring a seventh chrominance signal based on self-correlation within a fourth horizontal range of the first chrominance signal; and

a third chrominance signal selection section for selecting the sixth chrominance signal or the seventh chrominance signal as the third chrominance signal according to the
10 degree of the oblique correlation detected by the oblique correlation detection section,

the fourth range is wider than the third range,

the third range is wider than the first range, and

the fourth range is wider than the second range.

15 6. The device of Claim 1, wherein the first chrominance signal acquisition section comprises:

a plurality of stages of delay circuits receiving the first chrominance signal as first-stage input; and

a median value detection section for detecting a median value of P signals among
20 the first chrominance signal and outputs of the plurality of stages of delay circuits determined according to the degree of the oblique correlation detected by the oblique correlation detection section and outputting the detected median values as the second chrominance signal, and

the delay circuit at each of the plurality of stages delays the input signal by a half
25 period of the first chrominance signal.

7. The device of Claim 1, wherein the first chrominance signal acquisition section comprises:

5 a plurality of stages of delay circuits receiving the first chrominance signal as first-stage input;

a first median value detection section for detecting a median value (first median value) of P signals among the first chrominance signal and outputs of the plurality of stages of delay circuits;

10 a second median value detection section for detecting a median value (second median value) of Q signals (Q is greater than P) among the first chrominance signal and the outputs of the plurality of stages of delay circuits; and

a selection section for outputting the first median value or the second median value as the second chrominance signal according to the degree of the oblique correlation detected by the oblique correlation detection section, and

15 the delay circuit at each of the plurality of stages delays the input signal by a half period of the first chrominance signal.

8. The device of Claim 4, wherein the second chrominance signal acquisition section comprises:

20 a plurality of stages of delay circuits receiving the first chrominance signal as first-stage input; and

a median value detection section for detecting a median value of R signals among the first chrominance signal and outputs of the plurality of stages of delay circuits determined according to the degree of the oblique correlation detected by the oblique correlation detection section, and outputting the detected median value as the third
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chrominance signal, and

the delay circuit at each of the plurality of stages delays the input signal by a half period of the first chrominance signal.

5 9. The device of Claim 4, wherein the second chrominance signal acquisition section comprises:

a plurality of stages of delay circuits receiving the first chrominance signal as first-stage input;

10 a first median value detection section for detecting a median value (first median value) of R signals among the first chrominance signal and outputs of the plurality of stages of delay circuits;

a second median value detection section for detecting a median value (second median value) of S signals (S is greater than R) among the first chrominance signal and the outputs of the plurality of stages of delay circuits; and

15 a selection section for outputting the first median value or the second median value as the third chrominance signal according to the degree of the oblique correlation detected by the oblique correlation detection section, and

the delay circuit at each of the plurality of stages delays the input signal by a half period of the first chrominance signal.

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10. A video signal processing method comprising the steps of:

(a) detecting correlation in an oblique direction (oblique correlation) of a composite video signal;

25 (b) extracting a first chrominance signal from the composite video signal based on vertical correlation of the composite video signal; and

(c) acquiring a second chrominance signal based on horizontal self-correlation of the first chrominance signal,

wherein in the step (c), the self-correlation is detected within a range corresponding to the degree of the oblique correlation detected in the step (a).

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11. The method of Claim 10, wherein the step (c) comprises the steps of:

(d) acquiring a third chrominance signal based on self-correlation within a first horizontal range of the first chrominance signal;

(e) acquiring a fourth chrominance signal based on self-correlation within a second
10 horizontal range of the first chrominance signal; and

(f) selecting the third chrominance signal or the fourth chrominance signal as the second chrominance signal according to the degree of the oblique correlation detected in the step (a), and

the second range is wider than the first range.

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12. The method of Claim 10, further comprising the step (g) of extracting a luminance signal from the composite video signal based on the difference between the composite video signal and the second chrominance signal.

20 13. The method of Claim 12, further comprising the step (h) of acquiring a third chrominance signal based on horizontal self-correlation of the first chrominance signal,

wherein in the step (h), the self-correlation is detected within a range according to the degree of the oblique correlation detected in the step (a), the range being wider than the detection range adopted in the step (c).

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14. The method of Claim 13, wherein the step (c) comprises the steps of:

(i) acquiring a fourth chrominance signal based on self-correlation within a first horizontal range of the first chrominance signal;

(j) acquiring a fifth chrominance signal based on self-correlation within a second horizontal range of the first chrominance signal; and

(k) selecting the fourth chrominance signal or the fifth chrominance signal as the second chrominance signal according to the degree of the oblique correlation detected in the step (a),

the second range is wider than the first range,

the step (h) comprises the steps of:

(l) acquiring a sixth chrominance signal based on self-correlation within a third horizontal range of the first chrominance signal;

(m) acquiring a seventh chrominance signal based on self-correlation within a fourth horizontal range of the first chrominance signal; and

(n) selecting the sixth chrominance signal or the seventh chrominance signal as the third chrominance signal according to the degree of the oblique correlation detected in the step (a),

the fourth range is wider than the third range,

the third range is wider than the first range, and

the fourth range is wider than the second range.